



Anritsu Industrial Solutions USA Inc.

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## Random Cryovac Pork

# KD7416AM X-Ray Application Report



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# Anritsu X-Ray Application Report

## Model

X-Ray Model: KD7416AM IP69k, Sanitary Design Model  
Reject Model: IP66 Dual Flipper Reject System

## Production Line Details

Product: Various Cuts of Pork in Cryovac Type Packaging  
Dimensions: Product height ranges from 1" bellies to 5" pork cuts  
Production Rate: 40ppm  
Belt Speed: 40m/min  
Orientation: Single File but random packages of meat are sent through the system  
Packaging: Cryovac Plastic

## Detection Accuracy Online

Needle Detection: Required in certain cuts – see imaging is sample needle tips detected  
Ferrous Detection: 0.7 | 1.5mm sphere pork cut dependent  
Non-Ferrous Detection: 0.7 | 1.5mm sphere pork cut dependent  
Stainless Detection: 0.7 | 1.5mm sphere pork cut dependent  
Stainless Wire Detection: 0.6mm | 0.7 dia x 2mm long in some cuts  
Glass Detection 2.39g/cm<sup>3</sup>: 2.0mm to 7.0mm glass sphere pork cut dependent  
Ceramic Detection 3.9g/cm<sup>3</sup>: 2.0mm to 7.0mm glass sphere pork cut dependent  
Bone Detection: 2mm to 10mm pork cut dependent

## Application Notes

Dedicated inspection will yield better results as the system can be set to the characteristics of the product cut. When running random products, the x-ray power needs to be adjusted for the larger cuts which reduces some detection capabilities in the smaller and lower profile cuts.

Bone-In slabs of ribs are possible but detection is reduced for this product due to its inherent bones that need to be ignored.

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## Results and Imaging

Dimensions of product (mm)		370L x 280W x 165H	280L x 230W x 130H	380L x 180W x 75H	495L x 165W x 90H	290L x 150W x 70H	170L x 165W x 90H	290L x 65W x 50H	460L x 280W x 65H
Weight (Kg.)		7.55	4.7	3.7	4.8	2.2	1	0.5	4.4
X-Ray Power Settings		50kV / 4.0mA	50kV / 4.0mA	50kV / 4.0mA	50kV / 4.0mA	50kV / 4.0mA	50kV / 4.0mA	50kV / 4.0mA	50kV / 4.0mA
Detection Accuracy In mm	SUS 304 Ball SUS304:7.93g/cm <sup>3</sup>	d 1.0 – 1.5	d 1.0 – 1.5	d 1.0 – 1.5	d 0.8 – 1.2	d 0.8 – 1.2	d 0.8 – 1.2	d 0.8 – 1.2	d 0.8 – 1.2
	SUS 304 Wire SUS304:7.93g/cm <sup>3</sup>	d 0.6 x 5 0.7 x 5	d 0.6 x 5 0.7 x 5	d 0.6 x 5 0.7 x 5	d 0.5 x 5 0.6 x 5	d 0.5 x 5 0.6 x 5	d 0.5 x 5 0.6 x 5	d 0.5 x 5 0.6 x 5	d 0.5 x 5 0.6 x 5
	9 L x 1.5 dia. (16g needle tips)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	7 L x 1.5 dia. (16g needle tips)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	6 L x 1.5 dia. (16g needle tips)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	5 L x 2.0 dia. (16g needle tips)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	7 L x 1.5 dia. (18g needle tips)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	7 L x 1.2 dia. (18g needle tips)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	6 L x 1.2 dia. (18g needle tips)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	3 L x 0.8 dia. (20g needle tips)	No	No	Yes	Yes	Yes	Yes	Yes	Yes

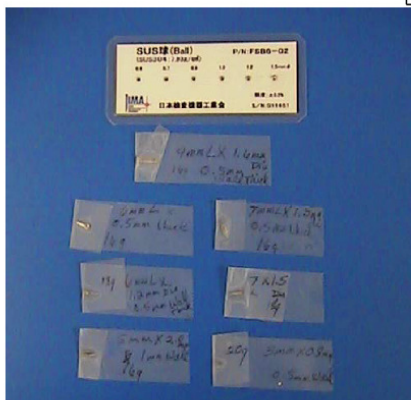
Example 1: d A - B

Can detect contaminants of B mm dia. in all areas of product

Can detect contaminants of A mm dia. in some areas of product

Example 2: d C

Can detect contaminants of C mm dia. or more in all areas of product



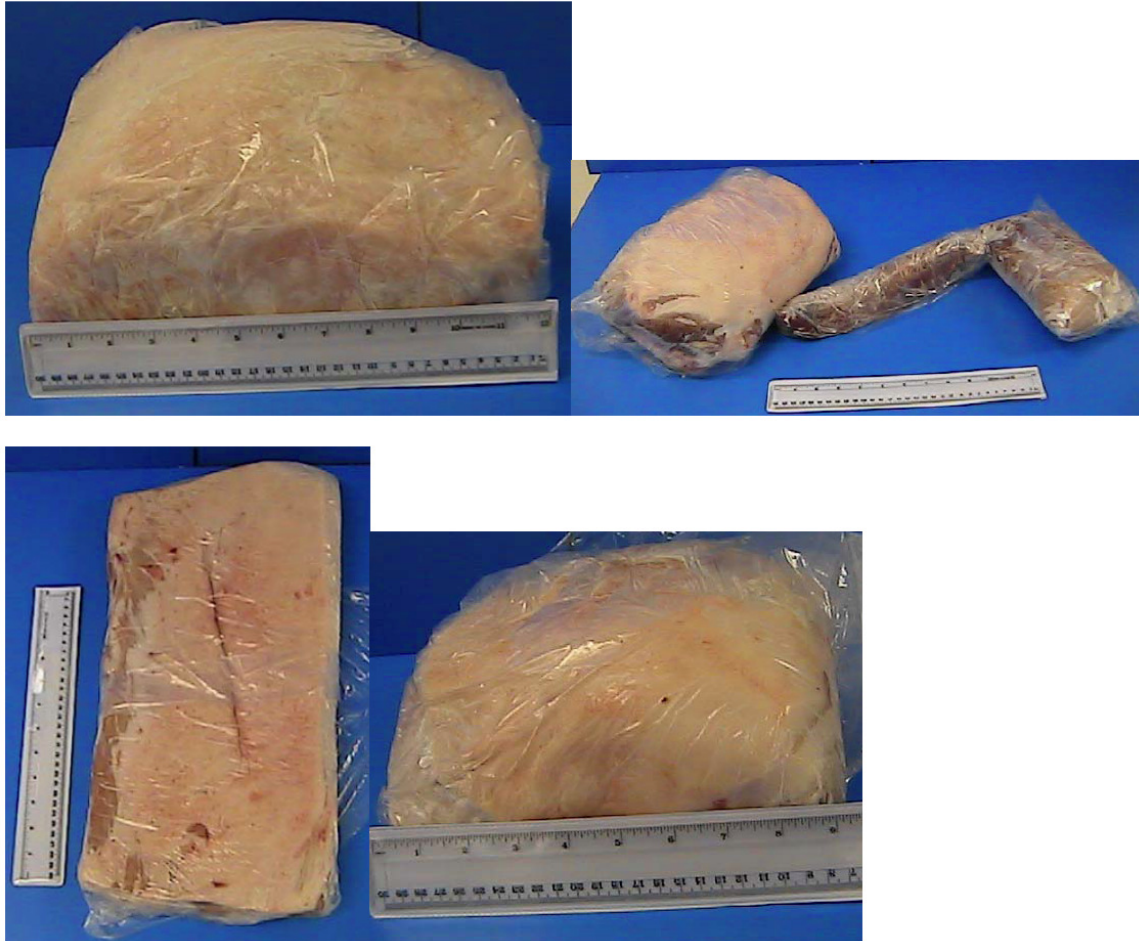
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**Imaging Continued ...**

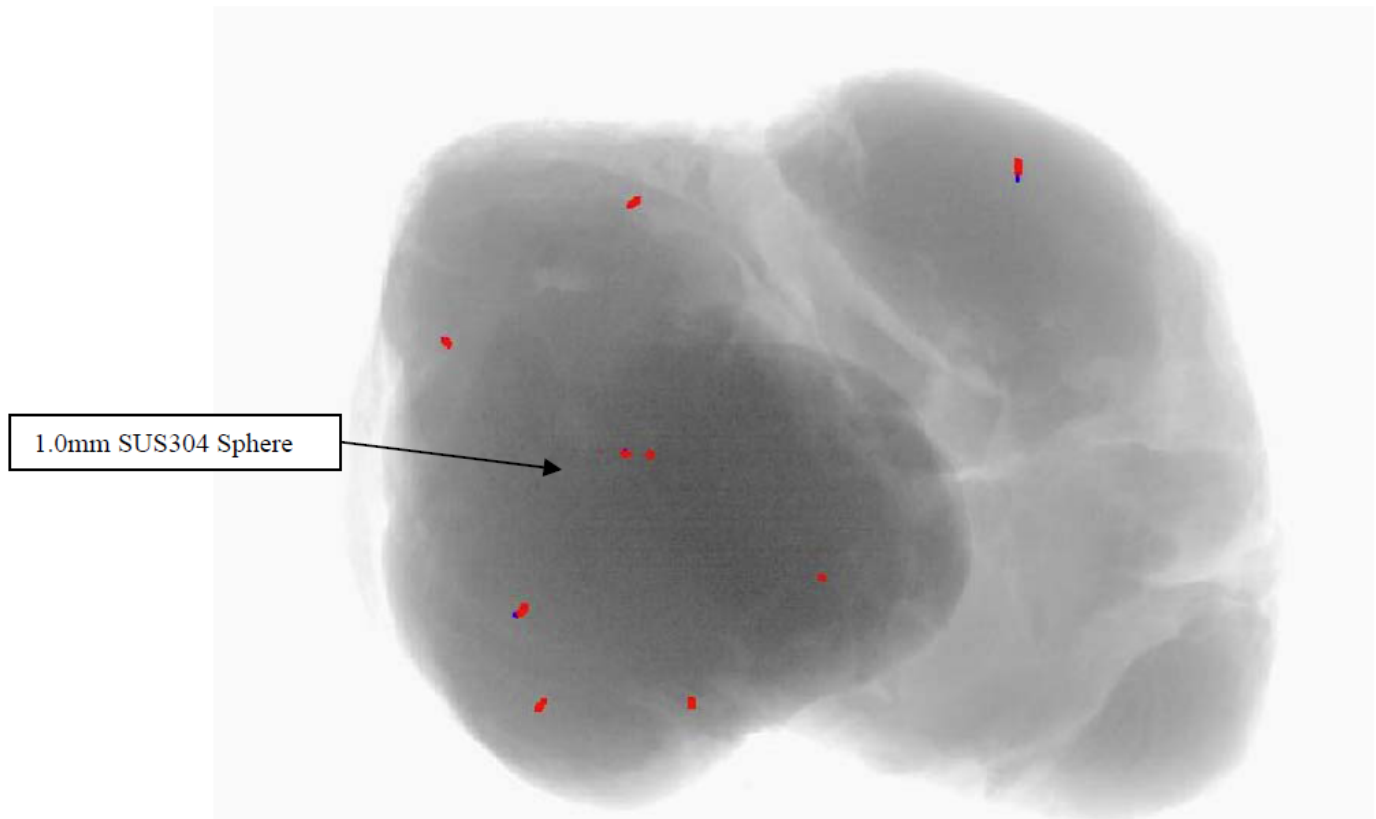
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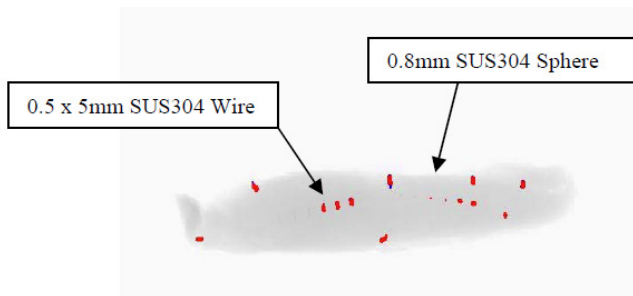
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Various needle tips inserted into the meat of the 7.55 kg Skinless Boneless Ham



Same needle tips in a .5 kg Tender loin using the same power and detection settings as the above ham.

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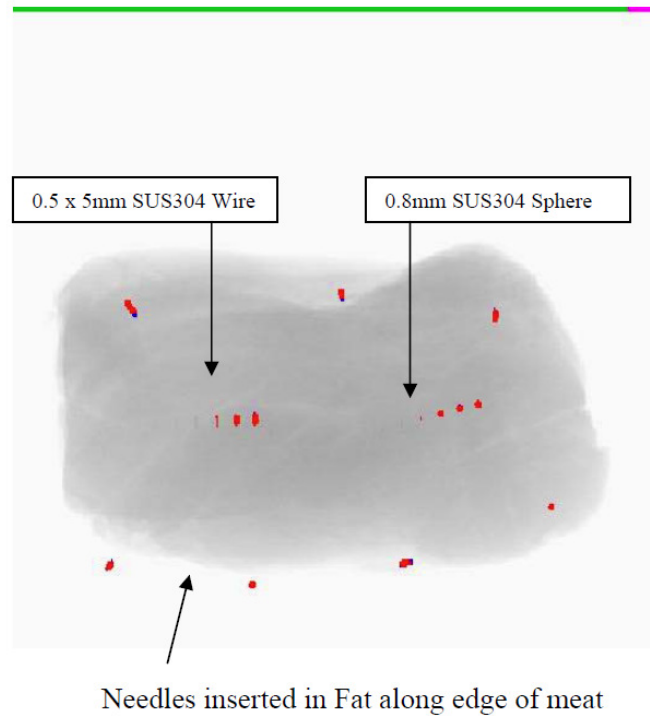
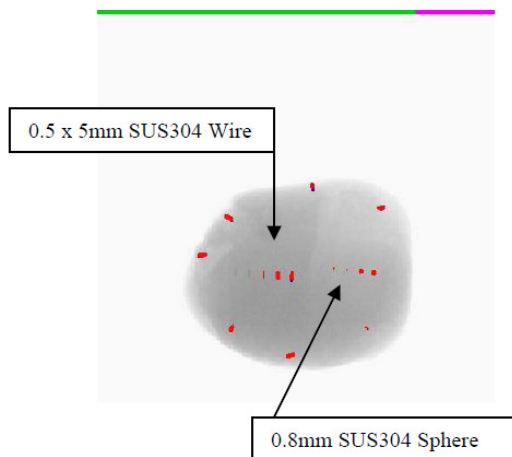
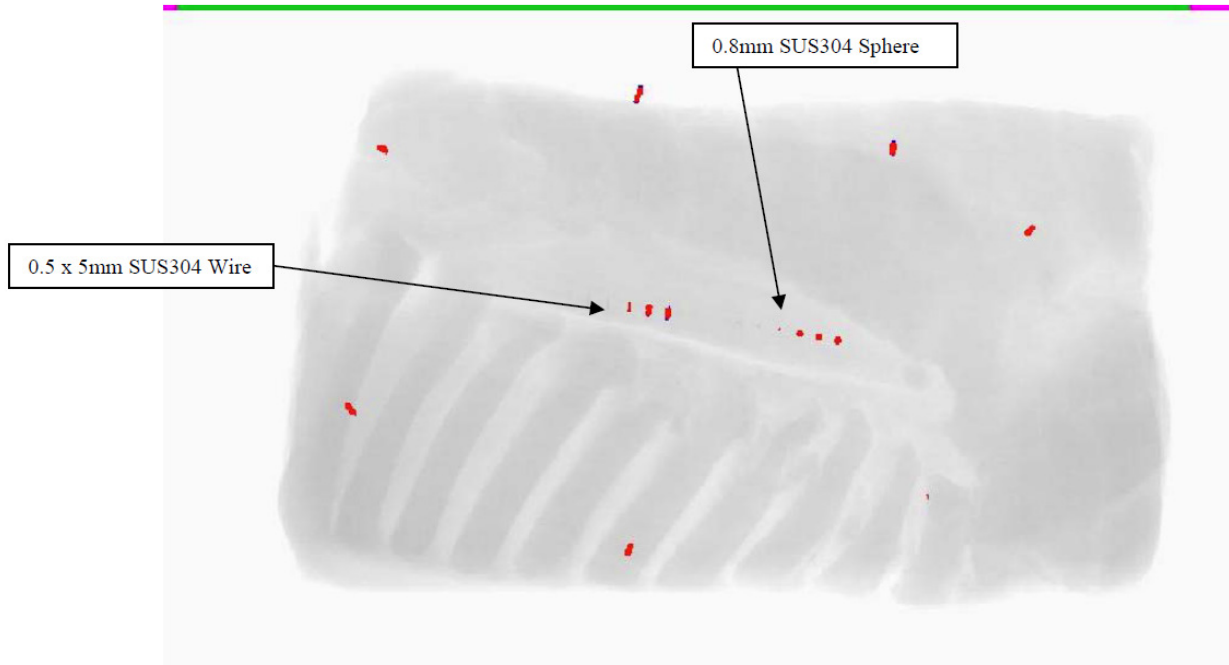
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